

What is claimed is:

1. A magnetic recording medium comprising:

a substrate;

a soft magnetic layer which is formed on the substrate and which contains B and at least one element selected from the group consisting of Fe, Co, and Ni;

a seed layer which is formed adjacently on the soft magnetic layer and which contains B and one of Pd and Pt; and

a recording layer which is formed adjacently on the seed layer.

2. The magnetic recording medium according to claim 1, wherein the soft magnetic layer has a concentration of B of 5 to 30 at. %, and the seed layer has a concentration of B of 20 to 70 at. %.

3. The magnetic recording medium according to claim 1, wherein the seed layer has a film thickness of 1 to 20 nm.

4. The magnetic recording medium according to claim 1, wherein the recording layer has an artificial lattice structure.

5. The magnetic recording medium according to claim 4, wherein the artificial lattice structure of the recording layer is a structure in which layers mainly composed of Co and layers mainly composed of Pd are alternately stacked or a structure in which layers mainly composed of Co and layers mainly composed of Pt are alternately stacked.

6. The magnetic recording medium according to claim 5, wherein the recording layer contains B.

7. The magnetic recording medium according to claim 6, wherein a concentration of B in the recording layer is 5 to 30 at. %.

8. The magnetic recording medium according to claim 5, wherein the layer mainly composed of Co included in the recording layer has a film thickness of 0.05 to 0.5 nm, and the layer mainly composed of Pd or Pt has a film thickness of 0.5 to 2 nm.

9. The magnetic recording medium according to claim 1, wherein the recording layer is composed of aggregates of columnar crystal grains having diameters of 2 to 15 nm.

10. A magnetic storage apparatus comprising:

the magnetic recording medium as defined in claim 1;  
a magnetic head which records or reproduces  
information; and  
a drive unit which drives the magnetic recording  
medium with respect to the magnetic head.

11. The magnetic storage apparatus according to claim  
10, wherein the magnetic head includes a magnetoresistance  
effect type magnetic head.